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FERNALD SITE CONDITIONS FERNALD ENVIRONMENTAL MANAGEMENT PROJECT OCTOBER 1993

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FACTSHEET

FERNALD SITE CONDITIONS

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FERNALD
Environmental Management Project

Studies now in progress will determine the most effective cleanup actions to address identified environmental concerns at the Fernald site and surrounding area.

Several types of waste materials are stored at Fernald. These include low-level radioactive waste, hazardous chemical waste, mixed waste (hazardous wastes which also contain radiological constituents), as well as construction rubble and other waste materials generated as a result of performing cleanup activities at the site.

These wastes are stored in six in-ground waste pits, three above-ground silos, and thousands of steel drums, metal boxes, and other containers. The drums, boxes, and other containers are stored in warehouses, former production buildings, tent-like support structures, and on outdoor concrete pads.

Cleanup Strategy

The facility and environmental issues associated with the site are divided into five parts (known as "operable units"), which are areas logically grouped according to their similarities in terms of environmental concern or likely cleanup alternatives. This strategy promotes a more structured and expeditious cleanup of Fernald under a Consent Agreement between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA).

Environmental studies at Fernald focus on the examination of surface soils and below-surface soils, surface water and sediment, groundwater, and atmospheric conditions to determine the nature and extent of radiological and chemical contamination present in each of the five cleanup units. This allows personnel to develop a detailed understanding of the associated risks posed to human health and the surrounding environment. Once that information is known, alternatives for removing or immobilizing the contamination can be analyzed.

During the course of environmental studies, certain conditions are occasionally identified which call for more immediate actions. Cleanup activities are accelerated as needed to address releases or potential releases of hazardous substances.

Operable Unit 1

The six waste pits being addressed under Operable Unit 1 contain approximately 475,000 tons of waste, including uranium, thorium, and other radioactive and chemical elements. Environmental concerns associated with the waste pits include the potential leaching of contaminants into below-surface soils and groundwater, rainwater runoff from the waste pit area into Paddy's Run and other drainage swales, and wind or water erosion from exposed surfaces and roadways.

Operable Unit 2

Operable Unit 2 consists of areas used to dispose of flyash generated as a result of burning coal in the boiler plant, spent lime from water treatment processes, sanitary waste, construction rubble and other materials from past operations at Fernald.

While uranium is the primary contaminant, studies are in progress to confirm that elevated concentrations of other hazardous materials are not present in Operable Unit 2. Environmental concerns associated with this cleanup unit include the potential leaching of contaminants into below-surface soils and groundwater, and wind and water erosion that could result in contaminants becoming airborne or migrating to surface waterways.

Operable Unit 3

Operable Unit 3 focuses on cleanup of contamination in the former production area resulting from the 37-year production mission at Fernald. This is one of

the largest and most complex of the cleanup units, due to the wide variety of former processing facilities and large quantities of radioactive materials and hazardous chemicals located in this 136-acre study area. The primary contaminant is uranium, and the main focal points of cleanup are buildings, equipment, and support facilities. Environmental concerns being addressed in this cleanup unit include contaminated soils, uncontrolled rainwater runoff, and asbestos abatement.

Operable Unit 4

Operable Unit 4 includes four above-ground storage silos, two of which contain approximately 9,700 tons of radium-bearing radioactive waste. A third silo contains dried uranium-bearing wastes; the fourth silo is empty. Environmental concerns associated with the silos include radon gas emissions and below-surface soil contamination due to leaching of contaminants from the silos.

Operable Unit 5

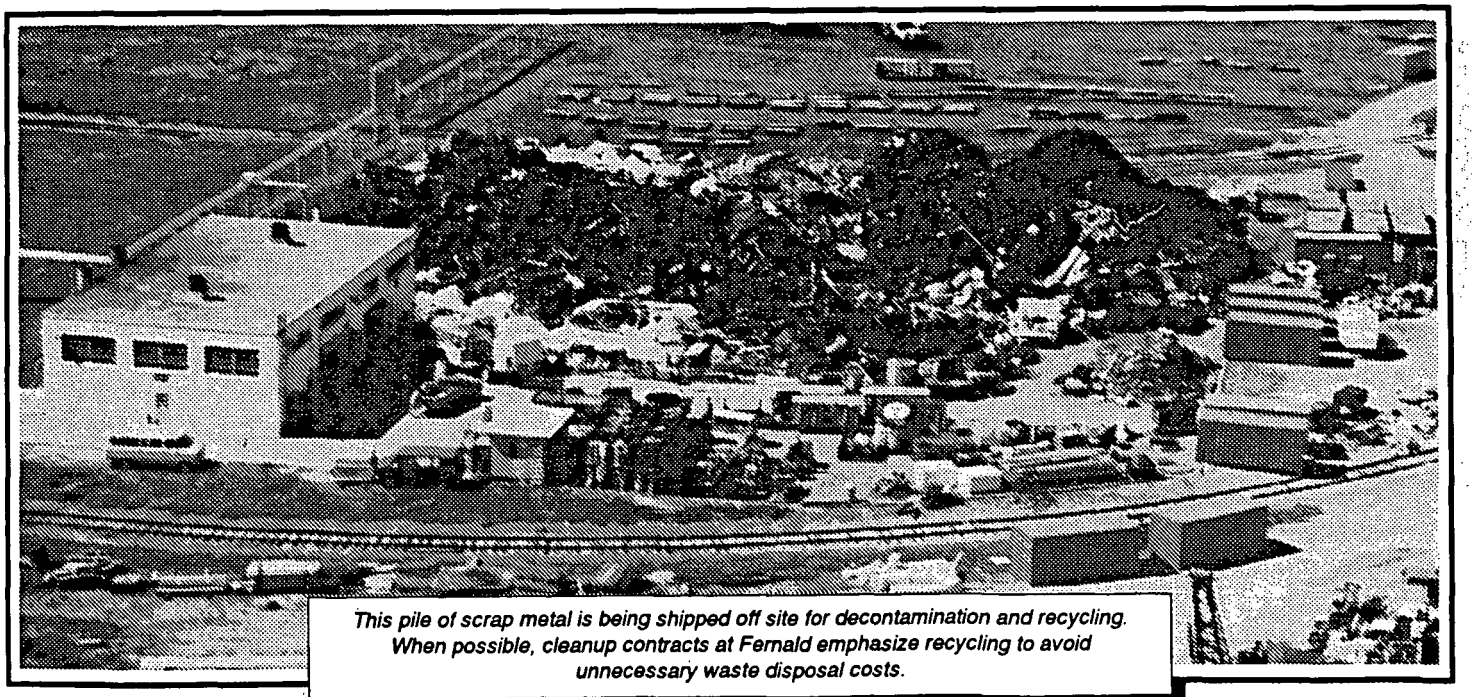
Operable Unit 5 encompasses the environmental media at Fernald and surrounding areas that could be impacted by the facility. While other cleanup units focus on specific waste facilities or defined areas, Operable Unit 5 is concerned with those areas that could be affected by the Fernald site. "Environmental media" includes the groundwater, surface water, soils, sediments, air, vegetation, and wildlife throughout the Fernald site and surrounding areas. The groundwater includes the Great Miami Buried Valley Aquifer, a source of water in the vicinity of Fernald, and pockets of "perched" water trapped in clay layers above the aquifer at several locations on the Fernald site.

Surface waters include the Great Miami River, Paddys Run, and the Fernald site's storm sewer outfall ditch. Sediments in Operable Unit 5 include solid materials carried in stormwater runoff or plant discharges of treated wastewaters to surface waterways or drainage ditches. Soils on and off the Fernald site boundaries also are being investigated for possible contamination due to past discharges or air emissions.

Selecting Cleanup Alternatives

Upon completion of environmental studies at Fernald, a Record of Decision (ROD) will be issued by the U.S. EPA to specify the final remedial alternative for each of the five cleanup units. As directed by the U.S. EPA in the Records of Decision, the DOE will implement selected final cleanup actions which are the most protective of human health and the environment.

For more information about this topic or about other Fernald activities and issues, contact the Office of Public Information, DOE Fernald Field Office, at (513) 648-3131.



This pile of scrap metal is being shipped off site for decontamination and recycling. When possible, cleanup contracts at Fernald emphasize recycling to avoid unnecessary waste disposal costs.